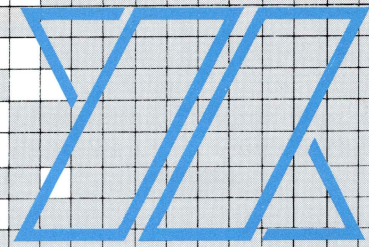
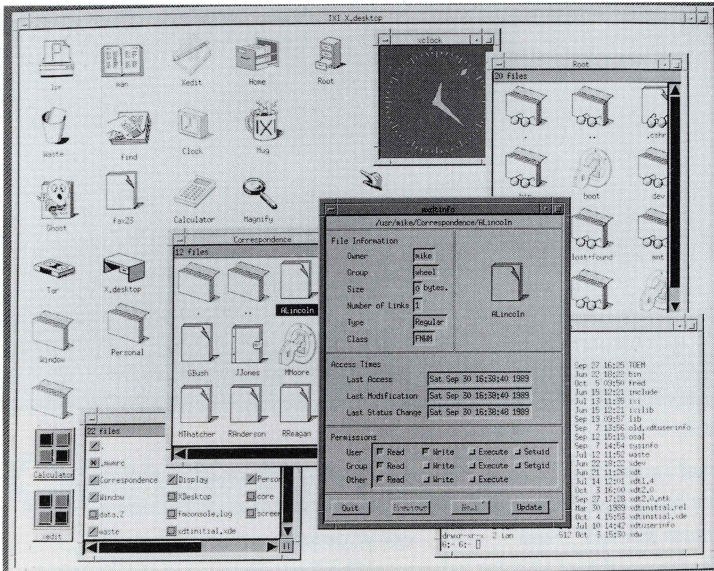


X.trä



Leading UNIX desktop is now Motif conformant



The fruits of IXI's commitment to provide leading edge technology is **X.desktop 2.0**, a UNIX^R desktop manager program that sets the highest standards for ease-of-use, performance and style.

X.desktop 2.0 adopts the look and feel of Motif, a leading graphical user interface from the Open Software Foundation, and as demand grows, future releases will support the OPEN LOOK style.

According to Raymond Anderson, IXI president, **X.desktop 2.0** was

developed in response to a multitude of requests from IXI's licensees for a UNIX desktop that adopts the Motif look and feel. The Santa Cruz Operation, Motorola, Sequent and Locus Computing are all taking on **X.desktop 2.0** as part of their Motif software environment.

X.desktop 2.0 was launched at the UNIX Expo show in New York. There was enormous interest because it is one of the first true Motif applications. **X.desktop 2.0** was implemented using the standard Motif toolkit. This guarantees full compatibility with other Motif software and greatly simplifies porting onto different hardware platforms. It also means **X.desktop** will benefit from changes to Motif in the future.









The feedback received from OEMs and users of **X.desktop v1.3** has been instrumental in building new features and improvements into Version 2.0. The result is that **X.desktop** is even faster with more configurability built-in but just as easy-to-use. It was important that the simple and clear way of working that has made **X.desktop** so successful with inexperienced UNIX users was not sacrificed.

X User Group

An open forum for those developing and using X software to discuss their experiences has been established in the UK. Called the UK X User Group, the emphasis will be on providing technically based information through a quarterly newsletter and meetings twice a year.

Continued on page 2

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UNIX Expo

UNIX Expo 1989 saw IXI's first direct participation in an end-user oriented show to back up our OEM customers. The Santa Cruz Operation and Locus Computing showed the "Xhibit" version of **X.desktop** (as part of Open Desktop) on their stands attracting end-user interest. Considerable attention was given to Uniplex's new X-based application, here **X.desktop** is an integral part of the software.

X.desktop was also in action on the Motorola, Sequent, Hewlett-Packard, Sun, Sony, Unipress, 88open, NCR, Prime and DEC stands.

Continued on page 4

X.desktop enters the business world as part of Uniplex Windows



Uniplex has taken the UNIX industry by storm and introduced the first X Windows-based application for commercial users in the UNIX marketplace. Uniplex Windows, the result of a joint development and marketing agreement between IXI and Uniplex, changes the face of the leading office automation software.

Uniplex Business Software can now address the growing demand amongst users for the multi-windowed graphical environment of X Windows. In addition, the software uses the IXI desktop management system, **X.desktop**, to provide an icon-based platform from which applications are launched and file management activities carried out.

"Uniplex Windows couples multi-windowed operations with the ease of use and power of the desktop manager"

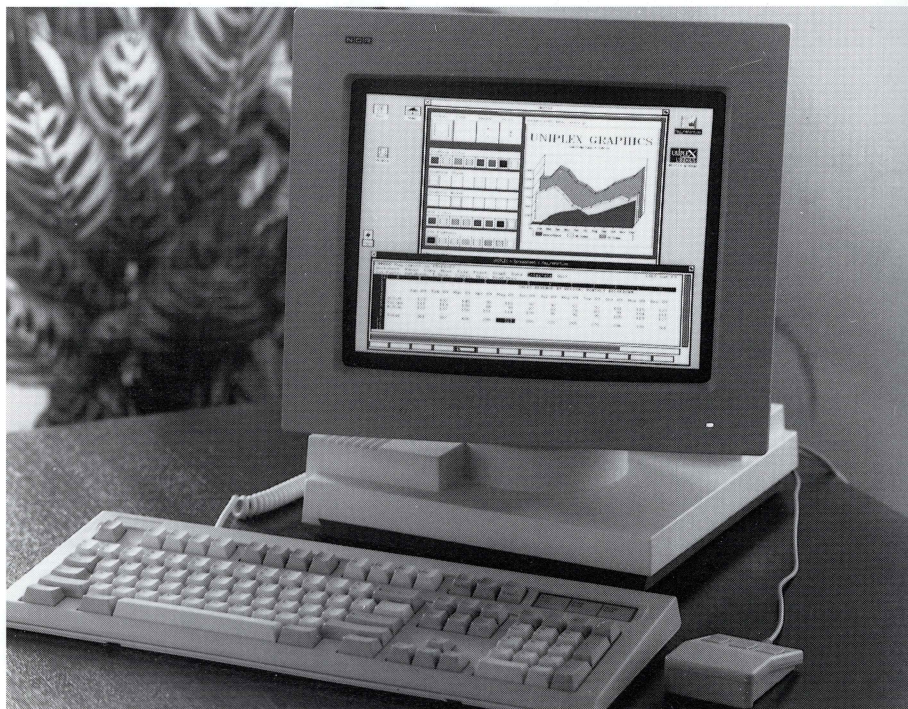
"The really exciting thing for us is that **X.desktop** is penetrating further into the office market as a key component of Uniplex Windows and with over 40% of

X User Group

(continued from front page)

The first meeting will be held on 21st November at the Institute of Electrical Engineers, 2 Savoy Place, London. There will be an exhibition of X products and software during the afternoon and the meeting will start at 6.30pm. The charter of the X User Group will be discussed. The meeting will also explore the demand for an X conference and exhibition in the UK and a catalogue of X applications.

If you would like to find out more, contact either Niall Mansfield of Unipalm on Tel: 0954 211797 (email: nmm@unipalm) or Paul Mahoney of X-Act Solutions on Tel: 04243 6368 (email: ptm@xact).



Uniplex Windows displayed on NCR's Tower View terminal.

the worldwide market (according to Dataquest), Uniplex has a significant part of the growing business market", said Anil Malhotra, IXI vice president of sales and marketing.

The benefits of the desktop management system are tremendous – you don't have to know UNIX to operate Uniplex software. Intuitive mouse-driven operations replace the need to type commands at the UNIX prompt so copying, deleting, renaming, printing or creating new files become simple operations with a mouse. Other applications may also be effortlessly integrated into the desktop.

"Uniplex Windows couples multi-windowed operation with the ease of use and power of the desktop manager", said Simon Walden, Uniplex Windows product manager. "What users see is a view of Uniplex through an X Windows graphical interface. The same Uniplex application that runs on character terminals will be driving the X terminals, except that Uniplex Windows becomes an intermediate step between Uniplex and what is displayed on the X terminal."

The graphical "look-and-feel" portion of Uniplex Windows is a result of the joint development activity between IXI and Uniplex but IXI foresees a tremendous demand for similar software

to bring other successful UNIX applications to the X Windows environment.

The look and feel of the Uniplex Windows interface can easily be changed to support other GUIs such as Motif and OPEN LOOK or can even offer different users on the same system a choice of either.

Uniplex Windows allows users with X Windows capability (increasingly through X terminals) to have control over multiple, overlapping windows and to iconise any running program and generate space for organizing other work.

Because Uniplex Windows is an add-on solution and is backward compatible, existing systems that are character-based do not become obsolete. *The Houston Chronicle* which had already identified X as an important part of its procurement plans decided to make a long-term commitment to Uniplex based on the company's X Windows strategy. "It should be an easy upgrade," said Jack Stanley, *Chronicle* VP of Operations, "and our users without X compatibility can still use a character-based version of Uniplex."

Uniplex Windows is now available and is fully compatible with the latest version of Uniplex Business Software.

Sequent Selects Desktop Software



Sequent Computer Systems, a leading manufacturer of UNIX-based, parallel computers, has signed an agreement with IXI to provide their **X.desktop** product on Sequent's Symmetry computers.

Sequent selected **X.desktop** because the software is designed for commercial end users, which is Sequent's primary market. As a part of the agreement, IXI will port the OSF Motif Graphical User Interface to the Sequent environment.

"We are very impressed with the ease of use, configurability and performance of **X.desktop**," said Gary Whitney, Sequent's group marketing manager for Desktop Integration. "In addition, we decided to take full advantage of IXI's expertise in X Windows based technologies by contracting them to port Motif to our environment. IXI are recognised and respected internationally as a leading company in this field."

The deal further increases the wide range of systems across which **X.desktop** is available. Sequent have been very successful selling systems with relational database applications to commercial customers. In addition, Sequent recently signed large OEM deals with Prime and Unisys.

"Sequent have earned a reputation for developing high quality, high performance products", said IXI president Ray Anderson. "They are keen to ensure this principle applies equally to their user interface offering. Both our companies demonstrate a strong commitment to industry standards in our product offerings."

Sequent will be showing their latest product range – including X.desktop, at the Unix Expo in October.

IXI joins OSF



This summer, IXI joined the Open Software Foundation (OSF), an international organization backed by many of the key players in the UNIX field. The OSF is dedicated to the development and delivery of an open, portable software environment. Its Motif graphical user interface (GUI) is now widely adopted by hardware vendors and is being used by software developers to form the basis of the next generation of UNIX software.

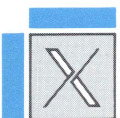
"Support for open systems is a vital part of IXI's corporate objective," commented Ray Anderson, IXI's president. "Our decision to become an active member of the OSF is very much influenced by OSF's total commitment to the open process and we want to be a part of this refreshing movement in the industry."

Through its OSF membership, IXI will have early access to OSF technologies and will be able to continue to provide excellent support to the company's OEM licensees who are interested in using the Motif version of **X.desktop** (see front page).

"IXI's decision to join OSF underscores our commitment to make open systems an international realization" said Donal O'Shea, OSF vice president of operations. "IXI has played an active role in promoting the X Window System in Europe."

At the time that IXI joined the OSF, the OSF was celebrating its 150th member. Its membership covers a broad spectrum from major OEMs and software vendors to large end users such as Shell, Boeing and McDonnell Douglas.

X Server for OS/2



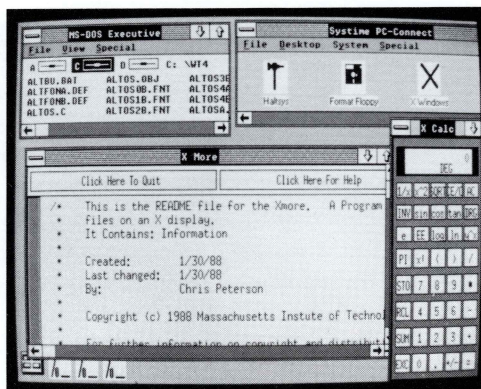
IXI has been selected to assist in the development of an X Window System server for OS/2 by VisionWare Limited, a developer and marketer of a variety of PC software solutions headquartered in Leeds, England.

The product, an X server for OS/2 which will run under Presentation Manager, is scheduled to be released early next year and will be the first of its kind available in the market.

VisionWare selected IXI to play a vital role in the product development. IXI, using its X expertise, will ensure that the X server conforms to the standards defined by the X community.

"Our experience in working with several hardware vendors and major end users leads us to believe that there is a large untapped demand for X in the OS/2 environment," said Anil Malhotra, IXI vice president of sales and marketing. "Our role in this development project is to ensure that the server meets customers' expectations and provides seamless integration between X and OS/2 software."

VisionWare specialises in DOS/



UNIX integration. The company's product PC-Connect, has been adopted by major OEM's such as Altos Computer Systems, Pyramid Technology Inc. and ICL North America.

The X server for OS/2 will allow OS/2 applications and remote X clients to display concurrently on the same screen. The product will also provide cut and paste functionality between OS/2 and X Window environments as well as providing full color support. The X server for OS/2 will offer full compatibility with the forthcoming X11 release 4 from MIT.

OSF™
Member

Open Software Foundation

Cambridge University uses X.desktop for teaching



The versatile nature of IXI's **X.desktop** allows the software to be used in many different ways. In the last

Xtra, we reported that **X.desktop** is being used in Computer Integrated Manufacturing by Reflex Manufacturing Systems.

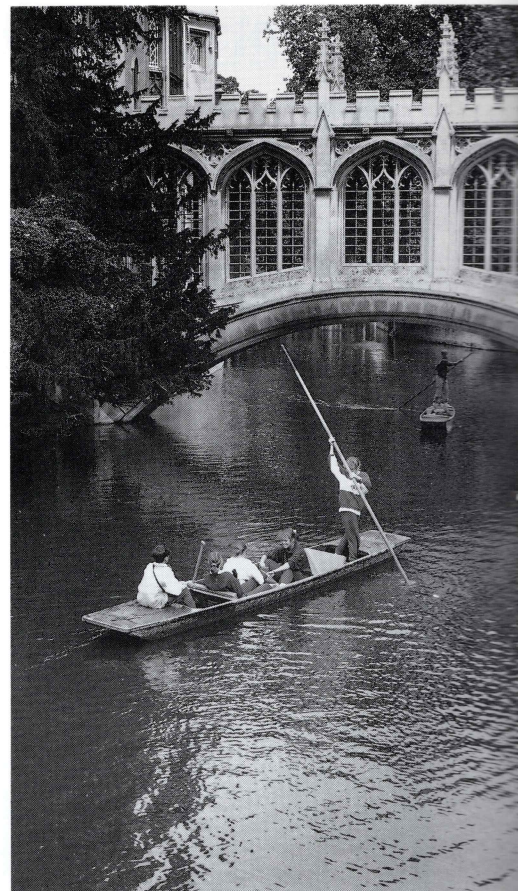
Recently Cambridge University in England began using IXI's **X.desktop** as a teaching tool for undergraduates in the Department of Engineering. **X.desktop** is the standard interface for introductory teaching on the department's Hewlett-Packard 900/340 systems.

Professor Fallside who masterminded the project was searching for an interface which did not intimidate the user but provided a clear way of running programs and looking through the hierarchical UNIX filing system. **X.desktop** was chosen because it shields

the early user from the UNIX command line and provides an easy-to-use graphical working environment.

A first year student has only 10 hours of hands-on time in which to learn PASCAL programming so it was important that they did not have to spend time mastering the UNIX operating system. The Department of Engineering have configured **X.desktop** to display PASCAL compilers and the EMACS text editor as icons that sit on the desktop. A student can simply compile a program by picking up the icon representing the program and dropping it on the compiler icon using a mouse.

X.desktop is also being used to teach the second year students FORTRAN programming and there are plans to extend its usage to all students within the department.



Leading UNIX desktop

(continued from front page)

IXI has collaborated with information designers and human factors engineers in the USA, UK and Japan to produce a new set of standard icons which give **X.desktop** a style and consistency which appeals to users (and computer salesmen!).

X.desktop is an iconic front-end for UNIX computers. Users can leave behind the difficulties of the UNIX command line and run existing text-based applications as well as graphical software using fast, intuitive, mouse-driven operations.

Users rapidly gain confidence with their UNIX computer through **X.desktop**'s visual approach. Once logged onto a system, the screen displays a stylish, easy-to-use desktop manager. All the files, programs and communication facilities appear as instantly recognizable icons. You can run programs and organize your working environment simply by manipulating the icons. Experienced UNIX users have all the benefits and configurability of **X.desktop**'s working environment plus access to the UNIX shell at any time.

FEATURES OF X.DESKTOP 2.0

- ▷ **X.desktop** uses the standard Motif toolkit to guarantee compatibility with other tools and applications which use Motif and provides a common look and feel with other Motif software.
- ▷ Professionally designed icon sets providing the popular 3D look and feel. **X.desktop 2.0** includes several sets of icons designed for high and low resolution screens ensuring excellent clarity.
- ▷ The most widely used programs, files and directories are stored in a special directory, the Supply Cabinet, which is iconized and located on the desktop for immediate access.
- ▷ Both the desktop and directory menus are configurable so the system administrator can add, delete or change any options. For example if a system administrator does not want users to have access to the UNIX shell, the menu can be customized to remove that option altogether.
- ▷ **X.desktop**'s performance can be optimized in a stand-alone or host-terminal environment by tailoring the client-server load.
- ▷ There is a user friendly rule language allowing the use of full length words instead of abbreviated codes when editing **X.desktop** rule files.
- ▷ Increase in configurability of **X.desktop**, for example, providing full access to the UNIX shell command language from within **X.desktop**'s rule language.

X Consortium helps publisher

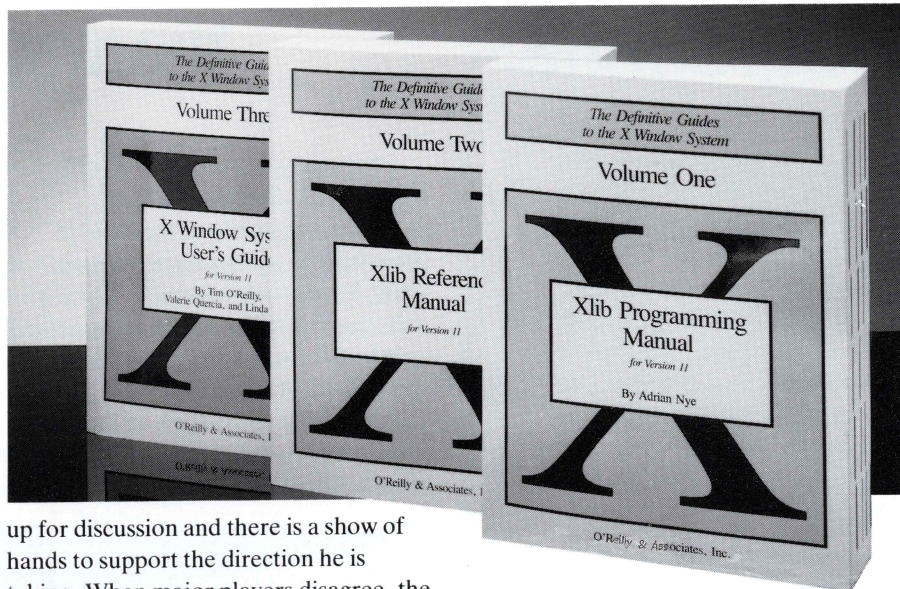


O'Reilly & Associates have quickly become a well respected publisher of X Window System book and manuals. A year ago, O'Reilly's joined the MIT X Consortium so that as a publisher they could serve the needs of the X development community better.

Through its membership of the X Consortium, O'Reilly's have more timely access to new developments in X and can contribute to the growth and success of the X market.

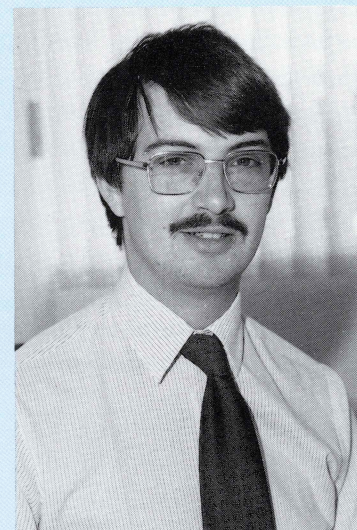
X Consortium members use early versions of software to check that the main distribution of each release is of a good quality. O'Reilly's on the other hand, use the early version to keep their documentation up-to-date. Author Adrian Nye at O'Reilly's is currently putting the finishing touches on two Xt Toolkit manuals. To develop text concepts and examples in manuals, Adrian has been able to run an alpha Release 4 of X11 – the actual Release 4 is due out early next year.

Consortium members can also influence decisions being made about X development. Meetings are open to all members, regular and associate. For most issues, the meetings are very collegial and democratic, with decisions made by consensus after all have had a chance to speak. For example, after Bob Scheifler (head of the X Consortium and primary author of X) has made a presentation, the meeting is then opened



up for discussion and there is a show of hands to support the direction he is taking. When major players disagree, the meetings get more formal and votes are limited to regular members.

The X Window System Series developed by O'Reilly's includes X Protocol Reference Manual, Xlib Programming Manual, Xlib Reference Manual and X Window System User's Guide. Two volumes on the Xt Toolkit will be released in early 1990. A quick reference, X in a Nutshell, and a book on XView programming are also in development. Contact IXI Information Services division on 0223 462131 for further details.



Clive Feather, vice president of development at IXI has been appointed the Chairman of the IEEE P1201.1 Working Group. The group is working on a standard for programmer interfaces to windowed user interfaces, which can be passed into the International Standards Organisation for formal ratification.

IXI is active in the core standards which form the stable platform on which we can build our business. In his role as Chairman, Clive is able to keep in touch with any developments at IEEE which might affect IXI or our customers, and to share his own experiences with software development and porting with a wider audience.

XView Opens X Window



Sun Microsystems has recently appointed IXI's Information Services division as independent supplier of the XView toolkit source code and documentation. The toolkit has been developed by Sun to enable software developers to move applications based on Sun's proprietary SunView toolkit to the X Window System. This will allow applications to be networked and ported to different hardware platforms.

IXI will be backing up the supply of the XView source and documentation with consultancy, training and

development services, helping companies implement the XView toolkit on their different hardware platforms. IXI has gained substantial experience in porting X based applications such as **X.desktop**, Xt and OSF Motif to diverse hardware platforms.

XView provides the SunView programmer's interface (used by several thousand software packages worldwide) but implements this using the X Window System protocols and with the OPEN LOOK look and feel. It has been submitted to the X Consortium for inclusion with the next release of X.

The XView source and documentation (priced at £105 plus VAT) are available from IXI on 0.25" cartridge tape in standard and HP format, with further formats to follow.

88open Programme

88open



88open is a non-profit organisation which is helping software vendors implement their software onto the Motorola 88000 RISC processor Application Binary Interface (ABI). An ABI means that once ported, an application can be sold in shrink wrap form on all computers with the same processor and ABI, irrespective of manufacturer, and without any further customisation or modification.

"With less time spent porting and on QA for different vendors with the same processor, we can allocate more resources to product development and customer support – everybody benefits!"

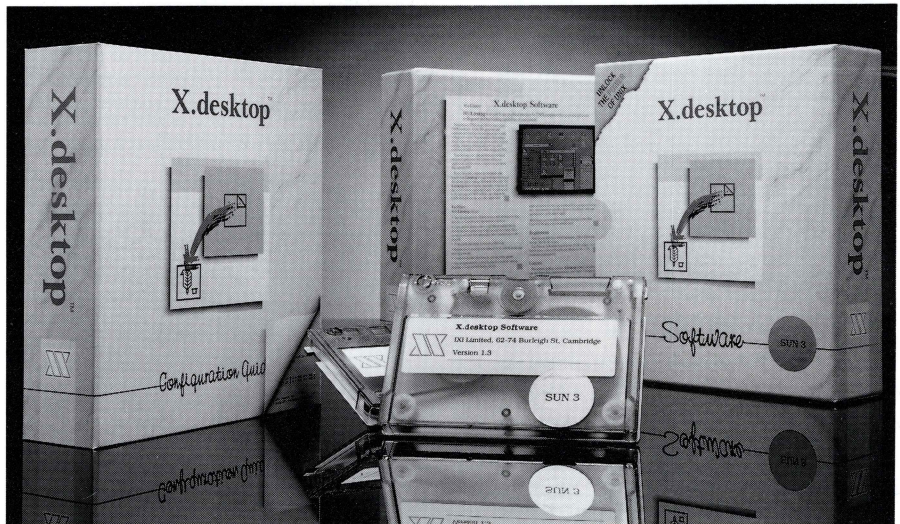
As a founder member of the 88open Software Initiative, IXI has become one of the first companies to introduce an 88Open ABI conformant product.

X.desktop was ported to an OPUS 88000 workstation at IXI's UK headquarters, and it was then demonstrated on the 88open stand at UNIX Expo (New York) running on a wide range of ABI conformant machines, including Everex, Sanyo, OPUS, Data General, and Tadpole.

Clive Feather, vice president of development at IXI welcomed the practical proof of the ABI idea: "With

less time spent porting and on QA for different vendors with the same processor, we can allocate more resources to product development and customer support – everybody benefits!"

IXI plans to port further products to the 88open ABI, and to support ABI initiatives for other processor families as they arise.



IXI Information Services

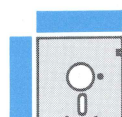


The Information Services Division at IXI was formed specifically to bring the latest information about X to Europe in an easily digestible form, and to ensure that developers and users did not lag behind the USA.

Since 1987, we have supplied books, manuals and source code for the X Window System. Our rapid turn-round service, using Federal Express delivery and our acceptance of credit cards and fax orders has been welcomed by our customers. As the main O'Reilly distributor in Europe, we have even become a supplier to book chains such as Dillons and Heffers.

Timely availability of the latest X source code is important to all software developers working with X. As soon as a new release of the X source code becomes available, it is vital that the implications of the new release are known in full, and that any bug fixes are applied to ISV products as fast as possible.

X11 Release 4



X11 Release 4 is due out early next year. X Consortium members are currently working with some of the components of the release. X11R4 includes a new reference server which offers substantial performance gains when using many windows, and cuts down on memory usage by up to 70%. In addition the new Xt intrinsics will be supplied, becoming the base for all further work with toolkits and a direction for future standardisation activity. Several useful new client programs will make the distribution useful to those who do not work at the system software level.

The only "pure" source of an X release is the X tape itself from MIT. As with previous releases, IXI will be one of the first to get the genuine X11 Release 4 tape. We are geared up to supply copies on cartridge tape within 72 hours of availability to our first customers, with printed and bound documentation following soon afterwards.

At the time of going to press, the release date had not been finalised, but if you would like to register for "instant" delivery, please fax your details to Natasha Relton at IXI as soon as possible. Fax No: 0223 462132

X.desktop Augments User Interface Management System



Unicad, a worldwide supplier of sophisticated software tools for software developers, is working with IXI to integrate **X.desktop**, IXI's graphical desktop manager, with X-Pression, Unicad's User Interface Management System (UIMS). As a result, **X.desktop** will be the desktop interface to applications designed by Unicad's UIMS software.

"This marketing agreement is another example of how **X.desktop** can assist software developers to ensure that their products can be easily used by a novice Unix user," said Raymond Anderson, IXI president and founder.

Unicad is a leading software developer of user interface design tools and has designed large turnkey applications for Fortune 500 companies such as Kodak, Lockheed and McDonnell Douglas.

X-Pression, Unicad's flagship product, is an X Window System based UIMS. X-Pression is an extensive collection of software tools, program libraries, and run-time support programs which enable an interface designer to create consistent, state of the art interfaces. By incorporating **X.desktop**, all software designed by X-Pression will now be accessible to those who are not familiar with Unix.

X.desktop will also help interface designers who themselves are not familiar with UNIX. According to Jose Villalobos, Unicad executive vice president, interface designers are not normally programmers. "The ease-of-use **X.desktop** will contribute to X-Pression is vital," said Villalobos. "Typically interface designers are design oriented and **X.desktop** provides the ideal working environment shielding them from the Unix command line. **X.desktop** will allow X-Pression users to focus their attention on the interface they are designing and not on the intricacies of Unix."

The combined X-Pression/X.desktop product will not require any knowledge of Unix. Icons representing files and programs are manipulated using a mouse so the user can easily run programs and carry out routine activities such as renaming, deletion, printing and copying.

A UIMS is rapidly becoming an important element in the speedy development of user interfaces. UIMS separates application code from the user interface components allowing interface designers to alter the style of an interface to suit the desires of the end user without altering application code. Additionally, application developers are free from user interface concerns and can concentrate on developing powerful and efficient application code.

(Open Desktop) *(continued from Back page)*

Considered by analysts as the platform that will launch UNIX into the mass market, **X.desktop** (known as Xhibit in Open Desktop) will soon become the standard desktop manager for 386 PCs.

X.desktop is particularly relevant for those new to UNIX because it shields them from the UNIX operating system making the transition from DOS to UNIX as smooth as possible. Together with the OSF/Motif graphical user interface, **X.desktop** is presenting UNIX

in an accessible form for the mass market.

Other components of Open Desktop include: SCOTM Unix System V/386 (Version 3.2), OSF/Motif graphical user interface, MIT X Window System as Xsight, Merge 386 for integrating DOS and UNIX systems, INGRES/386 SQL database, and TCP/IP and NFS for connectivity.

IXI Appointments

Summer 1989 has seen a number of key appointments at IXI.



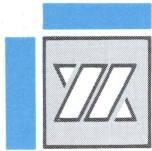
Michael Moore joined IXI in August as Senior Sales Support Analyst to provide enhanced support to our growing base of X.desktop OEMs. Mike joins IXI from JSB Computer Systems, with experience of a wide range of UNIX platforms and architectures.

Based out of our Cambridge (England) office, Mike will also be spending much of his time on-site with OEMs in the US, transferring support and technical information into their organisations and keeping in touch with their own requirements.



Noel Poore has been appointed X.softerm Technical Manager at IXI to head up and grow the development team working on IXI's soon to be launched X.softerm products. These are technologies which allow software developers to move existing applications to the X environment with little or no programming effort.

Noel joins IXI from GEMs, where he worked with X, X toolkits, and OPEN LOOK. Noel also worked on windowing systems for Lynwood Scientific and Torch Computers.



The IXI Challenge

Walking round the UniForum Boston show in August, it was immediately apparent that graphical interfaces to UNIX are definitely "flavour of the month". Of 128 display devices at the show, 78 were graphical devices, of which 52 were X Window System based. For the first time at any major UNIX show, the number of X terminals exceeded the number of ASCII displays.

Obviously, each exhibitor would want to put their best face on for the show, but these statistics demonstrate that most modern UNIX systems can support the X Window System to display graphics to their users.

The next major challenge, now that a mechanism is available for graphical user interaction is to actually exploit this capability with software that takes advantage of the mechanism to help users work more productively and enjoyably.

Apart from the number of X displays at UniForum being high, it was also pleasing to see more "real" software in action. The days when every X display at a show would be running the "ico" bouncing ball program, a couple of clocks, and a terminal emulator are thankfully now passed. Real applications such as Framemaker DTP, the Uniplex Windows OA system, mail managers and network management programs were in action, showing off some of the benefits

of the multi-windowed environment with graphical capabilities. IXI's **X.desktop** software could be seen on a dozen or so stands being used to launch real applications and help sales staff demonstrate their computers without learning the intricacies UNIX commands.

IXI has played a role in helping users and software developers take advantage of X and all its benefits. We founded IXI in 1987 and our first product, **X.desktop**, is now gaining wide acceptance as the way people deliver X based systems to end-users. **X.desktop 2.0**, launched at UNIX Expo, re-affirms our commitment to users by offering industry standard look-and-feel, leading edge visual appearance and enhanced performance. We have also been able to add more functionality and capability without losing the simplicity and coherence which makes **X.desktop** easy to learn and use.

The success of **X.desktop** and the value of IXI's mission has shown not only in market leadership and a quality customer base, but in our figures. Despite substantial expenditure on support infrastructure and R&D activity for the future, our first two years of business have seen solid profitability and a strengthening of our financial position, making us confident that we are meeting the needs of our customers.



Ray Anderson, president of IXI.

“We don't plan to ease off now! We still have a long way to go before most users can harness the potential of the powerful computers and software packages of today and tomorrow. Looking into the future, **X.desktop 3.0** will incorporate object management capabilities and some important new facilities for users.

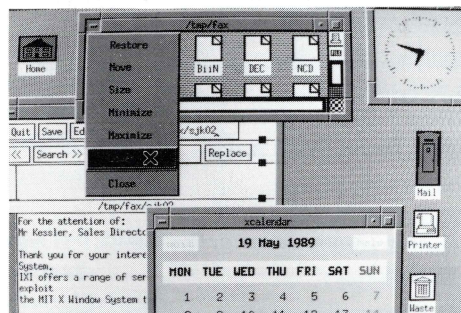
“We have also been working with companies such as NCR and Uniplex to help bring more application software quickly into the X environment. Many other businesses will be using the technologies we have developed to introduce significant software products in 1990.”

Open Desktop



Open Desktop from The Santa Cruz Operation is an integrated UNIX software product for 386 PCs that is set to take advantage of the incredible price performance breakthroughs in PC technology that have revolutionized the computer industry.

Open Desktop brings together industry-standard technologies including IXI's **X.desktop** into a multi-tasking, multi-user, open systems environment. Major vendors such as Zenith Data



Systems, Altos and Siemens will be supplying Open Desktop for their 386 PCs.

Continued on page 7

IXI Data Panel

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IXI

